

# One fish, two fish, Carp fish, Buffalo fish?



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## Part I: Overview of Business

The Iowa Department of Natural Resources (DNR) is a state organization that tries to maintain and enhance the natural resources in the state of Iowa through community partnerships and research.

## Part II: Job Specifics

In the fisheries department of the DNR, the management role ensures the quality and health of the watersheds in different areas around the state. One concern of management is water quality which leads to questions about the wildlife and plant life associated with different bodies of water in the area.

## Part III: Introduce the Problem

Common carp and Big Mouth Buffalo are large fish that are not desirable fish in terms of sport fish. These large fish can hurt the development and resources of more desirable fish. The job is to determine how many of these fish are in Center Lake, but then figure out how many should be taken out, and how that should be done.

## Part IV: Background

Students will need to be able to calculate a confidence interval using given data to make an estimate on the pounds per acre of each type of fish in Center Lake. The next step is for students to come up with a reasonable plan for removal and to list how many fish (pounds of fish) need to be removed from the system.

## Part V: Business Solution

- The DNR was able to make a tight confidence interval for the Big Mouth Buffalo fish, but are not as content with the Carp estimate. They will give guidelines and incentives to commercial fisherman on the removal of these fish.

## Part VI: Student Solutions

I think students will be able to create confidence intervals after learning specific techniques for calculations. I will be interested to hear how they think the removal process should be handled, and what poundage will be left in the lake.